eyeheight

CW-2

Multi-rate channel branding module

user manual

User Manual Versions

Versions	Changes	Date	S/W Ver
1.0	First release	15/03/10	1.01

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Table of Contents

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Table of Figures

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System Overview

This manual describes the function of the **CW-2**. The **CW-2** is a **geNETics** processing card which fits into a single slot of the eyeheight **etherbox** (FB-9E). This manual must be used in conjunction with the **etherbox** manual which contains much of the generic information common to all eyeheight **geNETics** products.

1.1 The CW-2 Product

The **CW-2** is a highly functional channel branding solution using the **geNETics** platform. The main features of the CW-2 are as follows:

- Multi-element text inserter, allowing a moving text ticker, time, date and three static text areas for use in the text layer.
- Dual-channel animated logo inserter; each on its own layer.
- All layers controllable separately.
- Compatible with **etherbox** GPI/Tallies.
- Fully software and firmware updatable using Flash technology.
- On-Board simple text based RS232 automation protocol.
- Compatible with eyeheight **geNETics** automation protocol.

Using the associated **netCrawler** PC software, users can:

- Create up to 10 page layouts consisting of up to two logo layers and a text layer per page.
- Position the dynamic text elements ('ticker', time, date and up to 3 other static text fields) within each page.
- Configure fonts and colours used across all pages.
- Preview the 'ticker' scrolling action for each page.
- Upload the project to the **CW-2** card over Ethernet.

1.2 Associated Equipment for the CW-2

The **CW-2** processing card requires the following in order to set up and operate the unit.

1. An **etherbox** chassis (**FB-9E**). Up to six **CW-2** units and be installed in one chassis.
2. A **Flexipanel** control surface such as an **FP-9** or an **FP-10**.

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Figure 1: Front view of etherbox (FB-9E) fitted with FF-9 blank panel

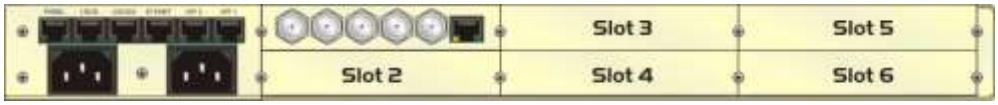

Figure 2: Rear view of etherbox with a single CW-2 installed.

Figure 3: FP-9 Flexipanel can be fitted on the FB-9E or remotely using and RR-9 kit.

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Reg. No. 2855535 Telephone: +44 (0) 1923 256 000 Fax: +44 (0) 1923 256 100 email: eyesales@eyeheight.com

2 Installation

This unit requires HD SDI or SD SDI digital video connections to the BNC connectors. Optionally RS232, GPI's and LTC may also be connected normally using CAT5e or better cable. The user should refer to the **etherbox** user manual for installation of the **CW-2** into a chassis and connection of flexipanels. This will also describe the process of acquiring a processing card (in this case the **CW-2**) by the **Flexipanel** which is necessary to access the menu structure within the **CW-2**.

2.1 Connections on the CW-2 product

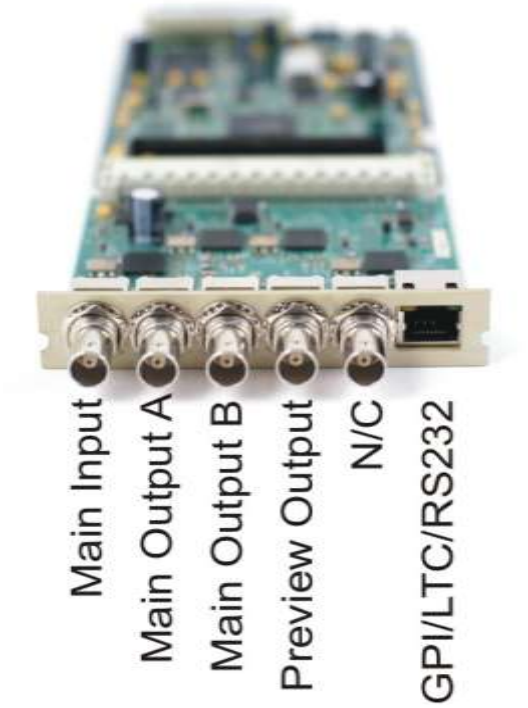

Figure 4: CW-2 connections.

The main video connections to the **CW-2** are shown above.

- Main video input
- Dual main video outputs (A & B)
- Preview video output
- RS232, LTC & GPI port

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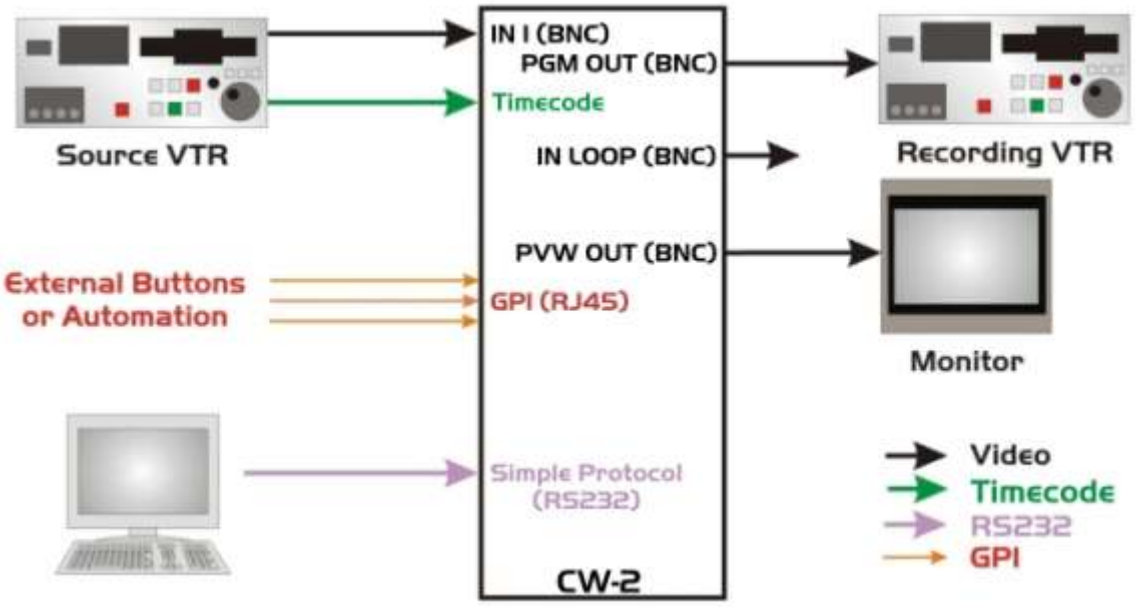

Figure 5: CW-2 typical connections.

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3 Operation

All **geNETics** products are controlled using a generic menu system. This generic menu system is operated from a generic panel (**Flexipanel FP-9** or **FP-IO**). An **FP-9** is shown below (An **FP-IO** has the same controls in a different layout style). For information about acquiring processor cards for control on a **Flexipanel** see the **etherbox** manual section 4.

3.1 General Flexipanel controls

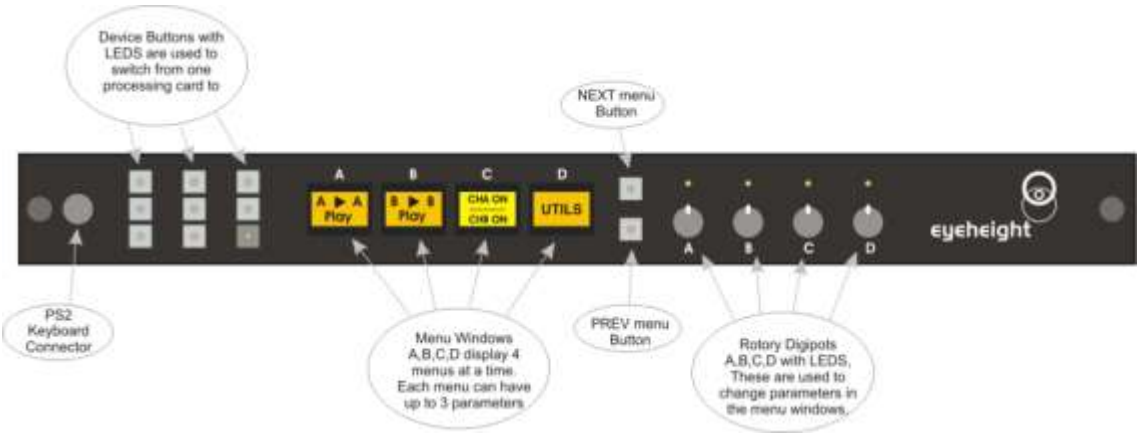

Figure 6: Flexipanel (FP-9) controls.

3.1.1 Device Buttons

There are 8 grey device buttons. These switch between the currently selected processing cards installed in the **etherbox**. It is also possible to select cards in another chassis if the **I-Bus** is connected to the other chassis.

3.1.2 Menu Navigation

There are two ways to navigate from menu to menu.

1. Using the **NEXT** and **PREV** buttons. These are for "Flat" menu structures. The **NEXT** and **PREV** LEDS will flash while further menus are available.
2. Using a GOTO ANOTHER MENU LCD button (as below coloured orange). This is more common and will take you straight to a relevant set of menus. Examples are the Play and UTILS menu's shown on Figure 7.

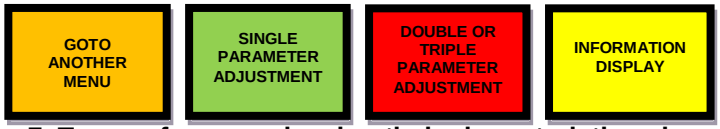

Figure 7: Types of menus showing their characteristic colours

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3.1.3 Parameter adjustment of a green menu

A green menu is one in which there is only one adjustable parameter. There are two ways to adjust the parameter in a green menu.

1. Press the green LCD button. This will increment the value in that window. This is most frequently done when the menu parameter is Textural for example switching a parameter between ON and OFF. In this case a button press is most natural.
2. Use the Rotary digipot (A, B, C or D) to adjust the parameter in the respective LCD window (A, B, C or D). The direction and speed of rotation enable numeric values to be set easily.

3.1.4 Parameter adjustment of a red menu

A red menu is one in which there is two or three adjustable parameters. In this case it is necessary to first select the menu by pressing the red button. When the red button is pressed it will turn green and either two or three of the rotary digipot LEDS will flash indicating that the respective rotary digipot will operate the respective parameter.

3.1.5 Information display

A Yellow menu (Which on most panels does look a light orange!) is one in which only information is displayed. An example of this is the software version display.

3.2 Setting up the CW-2

The **CW-2** manual will use the following terminology throughout:

- A ‘page’ is defined as a set of items, set up using a PC application called **netCrawler**, which can be displayed by using the master fader.
- The Logo 1 layer, Logo 2 layer and text layer are all defined as ‘items’ within a page. These items can be faded on and off separately from the master fader if required (so you can change a channel ident logo without removing ticker text, for example).
- The ‘PGM’ output is the main program output of the **CW-2**. The ‘PVW’ output is the preview output of the **CW-2**.

3.2.1 Building and uploading a set of pages for the CW-2

The **CW-2** will be supplied with a software program called **netCrawler**, which is used to build a set of pages and upload them to the **CW-2**. There is a separate manual describing how to use this software; only the upload process will be covered here.

To upload a project to the **CW-2** using **netCrawler**:

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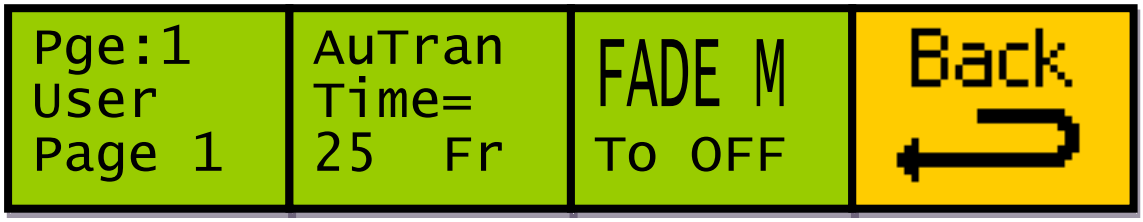
- Make sure the design is open, and is built with no errors (to build a project in **netCrawler**, go to Tools-->Build All, or press F7).
- Make sure the **etherbox** chassis is connected to the network your PC is on, and has a valid IP address. See the **etherbox** manual if more information is required for this process.
- Set the **etherbox** chassis to I-bus mode at 38.4k.
- In **netCrawler**, Go to Tools→Hardware profile, or press F9 to bring up the connection setup box.
- Input the IP address of the chassis the **CW-2** is in and the network ID (NID) of the **CW-2**. Press the 'Test' button to check it is set up correctly; a tick should appear after a few seconds below the product NID box to indicate a successful test. If the test fails, recheck the above few steps again, check for the presence of firewalls, etc. that may be blocking the test and try again.
- When the test is successful, go to Tools→Upload all, or press F8, to star the upload process.

During the upload, the unit will not reply to any communication from a panel, as well as not responding to any commands over simple protocol or **geNETics** automation. The upload can take anywhere up to around thirty minutes (a standard upload time is closer to ten minutes), and progress bars in **netCrawler** will indicate the upload is in progress.

3.2.2 How to select a page to display

To select a page to fade up, navigate to A-A Play→MASTER, which will display the below menu set:

Menus 004 - 007 PGM Output Select Menu



- the first menu selects the page, assuming pages are present and there is no page currently faded up
- the second selects the transition time
- the third fades the main output on and off air. If this menu shows 'M----M', the **CW-2** doesn't have valid page data.

3.2.3 Controlling items separately from the master fader

All parts of a page (logos 1 and 2, and the text layer) are by default controlled by the PGM output control described in section **3.2.2**.

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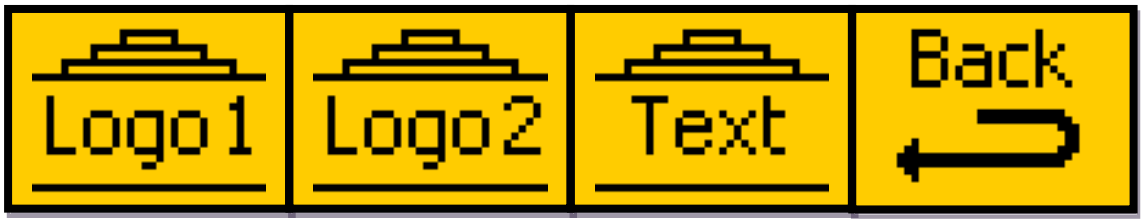
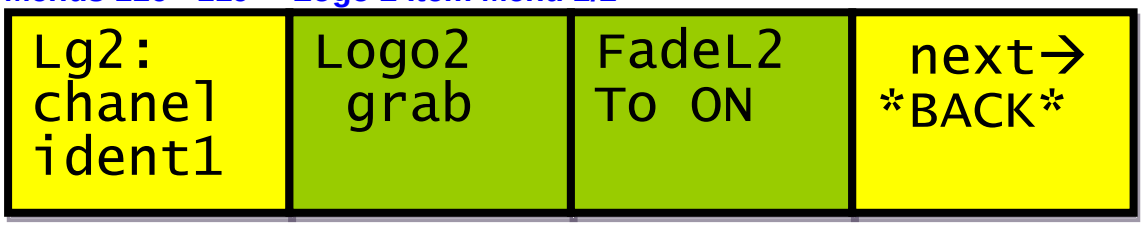
The control of individual items on the screen is accessed from the following menu, found by pressing PGM→Items:

Menus 096 - 099 Item Select Menu



Below is the logo 2 control menu:

Menus 116 - 119 Logo 2 Item Menu 1/2



To control an item separately from the master page control, the item must be grabbed; in this example by pressing 'logo2 grab'. When an item is grabbed, the button will display 'logo2 drop' instead. All layers can be faded up and down when grabbed.

Additionally, the logo to be displayed can be changed when the item is faded down. To do this, simply adjust the rotary digipot for the first menu until the required logo name is displayed, then press 'fadeL2 to ON' to take the logo to air.

3.2.4 Setting the time in frame lock time mode

The **CW-2** can be set to display time based on the incoming video frame rate. To set this, navigate to the below menu found by pressing Utils→Date/Time:

Menus 068 - 071 Date/Time Setup

Adjust the first menu to display 'FrLock' to put the unit into frame lock mode. To set the time and date that will be displayed, press 'Setup Date/Time' to display the following menu:

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Reg. No. 2855535 Telephone: +44 (0) 1923 256 000 Fax: +44 (0) 1923 256 100 email: eyesales@eyeheight.com

Menus 072 - 075 Internal Sync Date/Time Setup

To set the date and time, do the following:

- Press the 'Edit date/time' button
- set the date by adjusting the first menu variables:
  - dd - sets the day
  - MM - sets the month
  - y - sets the year

- set the time by adjusting the second menu variables:
  - HH - sets the hours
  - mm - sets the minutes
  - ss - sets the seconds

- press 'Save edited data'. The date and time will take effect on the next frame boundary, so the seconds count will start incrementing from that moment.

The display will briefly show 'data saved!******' before changing back to 'edit date/time' (its default display).

3.2.5 Setting the time in embedded timecode mode

The simplest way to display the time is to have the **CW-2** extract an embedded timecode, be it LTC, VITC or ATC. To set this, navigate to the below menu found by pressing Utils→Date/Time:

Menus 068 - 071 Date/Time Setup

Adjust the first menu to display 'timecd' to put the unit into timecode mode. To set up the type of timecode the **CW-2** needs to detect, press 'Setup Timecd Source' which will show the following menus:

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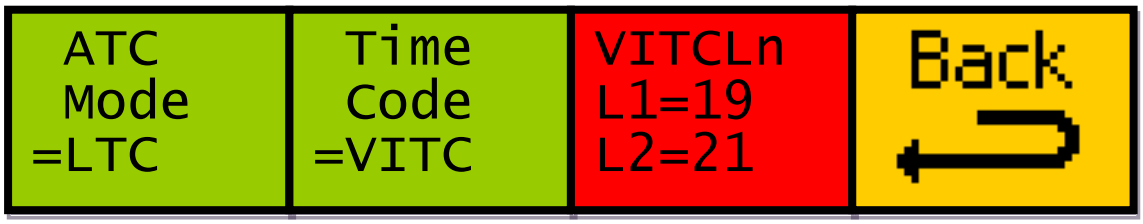
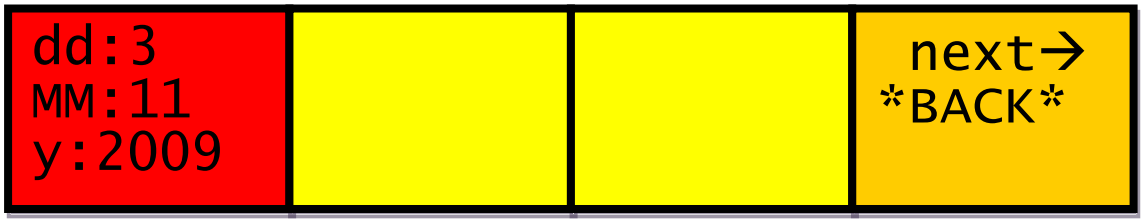
Menus 076 - 079 Time Code Menu



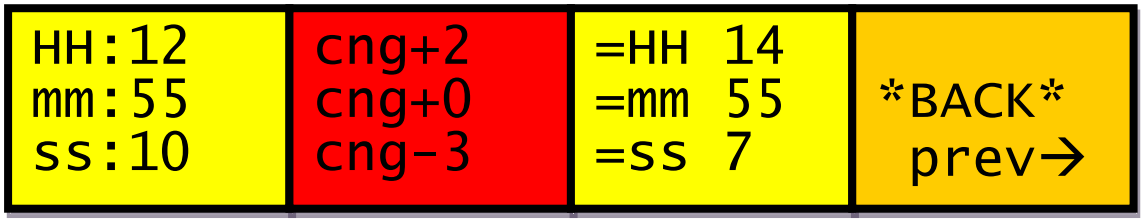
- Setting the timecode mode is done by adjusting the second menu between VITC, LTC and ATC.
    - If using ATC, the ATC mode is set by adjusting the first menu between LTC, VITC1 and VITC2.
    - If using VITC, use the third menu to select the line locations of the VITC data.

When the source of the timecode is set, go back to the date/time setup menu and press 'Setup date/time' to display the following two menus:

Menus 080 - 083 Timecode Date/Time Setup 1/2



Menus 084 – 087 Timecode Date/Time Setup 2/2



- To set the date, adjust the first menu (menu #080):
    - dd - sets the date
    - MM - sets the month
    - y - sets the year

- The time as it is extracted by the **CW-2** is displayed in menu #084:
    - HH - displays the hour (24 hour clock)
    - mm - displays minutes
    - ss - displays seconds

- The time that's actually displayed by the **CW-2** can be adjusted by plus or minus a second short of 24 hours. To do this, adjust the second menu of the second nested menu block above (menu #085):
    - the first line adjusts the hours from -23 to +23 hours

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    - the second line adjusts the minutes from -59 to +59 minutes
    - the third line adjusts the seconds from -59 to +59 seconds.

- The third menu of the second block above (menu #086) displays the time as it will appear on the PGM output.

Adjustments to the time will change the date if the adjustments made here cause a rollover in hours from 23 to 0 (and vice versa).
For example, if the date was 17/12/2009 and the hours are adjusted from 23:11.57 to 0:11.57 by adding an hour, the date will rollover to 18/12/2009. Changing the time back to the original 23:11.57 time will change the date back to 17/12/2009.

NOTE! When adjusting the 'hours' value, it is advisable to do so slowly. If the rotary trimpot is turned rapidly and the 'hours' value would cause a rollover to a new day, it is possible the day value will not be automatically updated. When adjusting the time is complete, it is worth re-checking the date is correct.

3.3 Uploading text data to the CW-2

Static text fields and ticker data are uploaded to the **CW-2** via the RJ45 port on the rear of the **CW-2**, using RS232 at 115.2k baud.

For full details on all of the simple protocol commands available, and for the complete specification of the RS232 connection, see section **5.2**, but below is an example of how to set up the text layer of a page before fading it on-air:

- First select a page as described in section **3.2.2**, or by sending an "SP" command. The page must contain at least one static text area, a date and a time display, and a ticker. For example, to select the third page in a **CW-2**, send "SP03" over RS232.
- Set the name of the static text area 1 by sending "F113Text area 1~~" to the **CW-2**. If any other static text areas need setting up then do so now.
- Send "XF" to have these text strings take effect on the PVW output.
- If using embedded timecode to extract the time, set up the timecode extraction mode as described in section **3.2.5**, then set the time offset if required by sending a "UO" command. For example, send "UO000000" to set the time OFFSET to 00:00.00. Then, work out the difference between the timecode time and the time you want displayed, and send that value as a "UO" command. So if the timecode is, say, 2 minutes ahead of real-time, you'll need to offset the time by +23hrs, +58mins: "UO235800". It's not currently possible to send negative times over simple protocol for the time offset, even though in the menu you can set values to be negative.
- If using frame locked time generation set the mode up as described in section **3.2.4**, set the time by sending a "UT" command. For example, send "UT121557" to set the time to 12:15.57

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- Send the “UD” command to set the date. For example, send “UD15012010” to set the date to 15 Jan 2010.
- Set the ticker mode to run once only by sending “TM0”
- Send the ticker text you want to display using the “TT” command. For example, sending “TT026This is some ticker text~~” will display “This is some ticker text” on the screen (once the **CW-2** has received the ‘take ticker text’ command, see below)
- Send the take ticker command “XTI”, which will take the ticker text sent above to the screen immediately. This should start the text scrolling on the preview output.
- Send the command “FUM”, to set the master fader fading up.

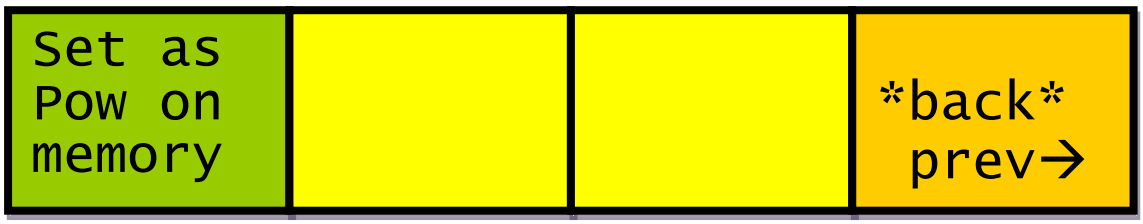
You should now see the page fade up on the PGM output of the **CW-2**, and once faded up the ticker should scroll once across the screen.

3.4 Memories

3.4.1 Power on memory

If the **CW-2** loses power for any reason, the unit will power up and load a default memory. To set up this memory, navigate to the below menu by pressing Utils→Mems→next→next→next→next

Menus 044 - 047 Memories Menus 5/5



3.4.2 User Memories

The user memories are a generic feature of all eyeheight **geNETics** products. The **CW-2** has six presets for common legalisation standards and six user memories, which are initially named, ‘user Mem 1’ through to ‘user mem 6’.

To save to a user memory, set up the unit as required and navigate to Utils→Mems→next→next, then save the settings from either of the menus shown below:

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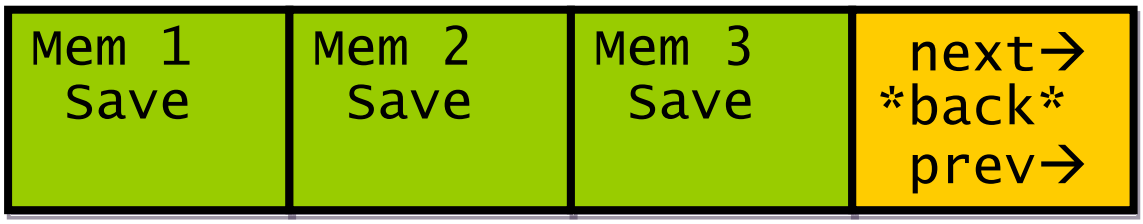
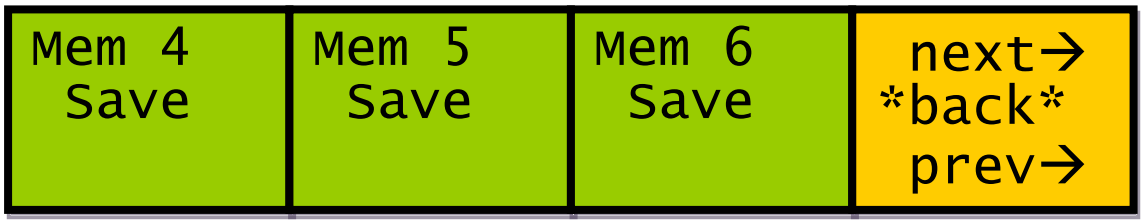
Menus 036 - 039 Memories Menus 3/5



Menus 040 - 043 Memories Menus 4/5



3.4.3 Naming User Memories

The user memories can be named with up to 6 characters. To do this plug in a PS-2 Keyboard into a **Flexipanel** and select the appropriate processor card with a device button. (See **Error! Reference source not found.** for connector location). To rename memory 1 to “625 v1”:

1. Hit F9 function key. The LCD displays will change to text entry mode.
2. Type “M01: 625 v1” and then press enter.
3. You may get a “not acknowledged” message from either of the above; this does not matter.

Other memories can be named in the same way but changing the 01 to other numbers (for user memory 2 use 02, for mem 3 use 03, etc.).

3.5 Tamper Locking the CW-2

The user can lock specific menus or all the menus on the **CW-2** so that it cannot be adjusted with a manual control panel. This does not effect automation.
To do this plug in a PS-2 Keyboard into a **Flexipanel** and select the appropriate processor card with a device button. (See Error! Reference source not found. for connector location). To lock only menu 5:

1. Hit F9 function key. The LCD displays will change to text entry mode
2. Type “L05:” and then press enter.

A padlock symbol will appear on the menu and it cannot be adjusted. To unlock menu 5, type “A05:” as step 2 above. Other menus are done in the same way
To lock the whole product type “L:” as step 2 above and to unlock the whole product type “A:” as step 2 above.

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3.6 GPI/Tally Set-up

3.6.1 On-Board GPI's

The **CW-2** is a **geNETics** product. The **geNETics** system uses generic Input/Output cards which have 3 GPI's, of which only 2 are present on the **CW-2**. These GPI's perform the following functions:

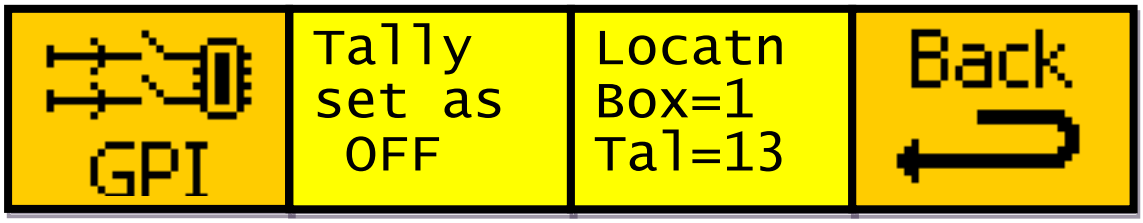
GPI 1 - Fade on or fade off the master page output
GPI 3 - Fade on or fade off Logo 2 if the logo is 'grabbed'

Activate = Short to ground or logic 0V. See section **5.1** in the appendix.

3.6.2 Configuring tallies on the etherbox

The **etherbox** chassis has three usable tallies. These are Tallies 11, 12 and 13. To set this up, navigate to Utils→GPI/O, which will display the following:

Menus 024 - 027 GPI/O Menu



The **CW-2** can use an **etherbox** tally to indicate the following, selected by adjusting the second menu above (menu #025):

- that it has no video input (will display 'Tally set as No vid')
- the state of the output; if it is faded up or down (will display 'Tally set as On-air')

Set up the third menu above (menu #026) for the box number and tally number that you wish to use. If you do not wish to use a tally set the box number to 0, or leave the second menu set to 'Tally set as OFF'.

Refer to the **etherbox** manual for further interface information.

3.7 Resetting the CW-2

There are 2 types of resets available which don't involve removing the **CW-2** from the chassis. Both of these are available from the following menu, navigated to via Utils→next→System→Resets:

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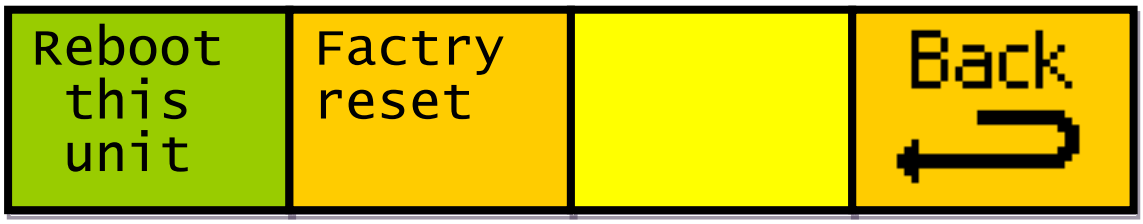
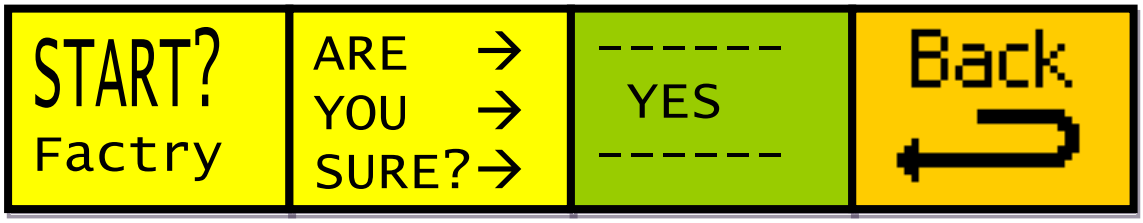
Menus 056 - 059 Resets Menu



The ‘reboot this unit’ option will have the same effect as removing power to the **CW-2**, without having to have physical access to the unit. If the unit exhibits unusual behaviour, this is a good action to take and may correct the problem. It is likely; however, the output video will be slightly interrupted as the unit resets, so doing this while on-air is not recommended.

The ‘Factry Reset’ option will display the following menu:

Menus 060 - 063 Factory Reset Confirmation Menu



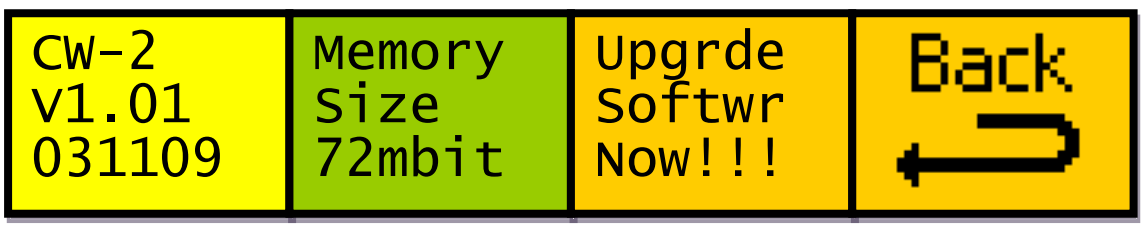
Pressing “YES” will restore all the factory default settings and will clear all the memories.
WARNING! Performing a factory reset will permanently erase all user memories that have been stored, will lose any page data, bugs, etc. that have been uploaded to it as well as erasing the current power-on default setting. The unit will repower itself and will be set up as if it has never been used before.

3.8 Software upgrade

Over time, updates may become available to give the **CW-2** new features, or to patch occasional problems. To do this, the **CW-2** must be put in a mode so a PC application called ‘Flasher’ can access the **CW-2** and upgrade it.

Navigate to the following menu, under “Utils→next→System→Ver’ns”

Menus 048 - 051 Software Menu



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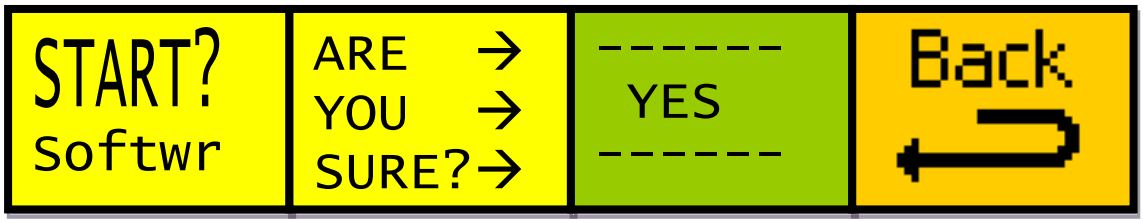
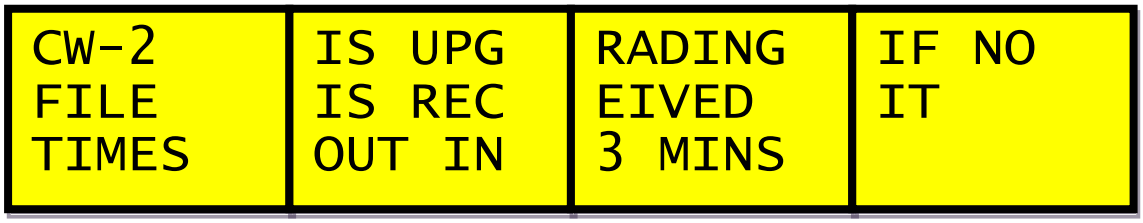
Pressing the ‘Upgrde softwe now!!!’ menu will display the confirmation menu as shown below:

Menus 052 - 055 Software Upgrade Confirmation Menu



When you are ready to begin the upgrade process, confirm it by pressing ‘yes’ and the following message will be displayed to confirm the unit is ready to be upgraded:

Menus 064 - 067 Software Upgrade In Progress Message



The unit will be set into the state where it can be field upgraded using the “Flasher” software which can be downloaded from our web site: www.eyeheight.com

If upgrading the **CW-2** becomes necessary, a more comprehensive set of instructions outlining the process will be emailed to you from eyeheight technical support, along with the files needed for the process.

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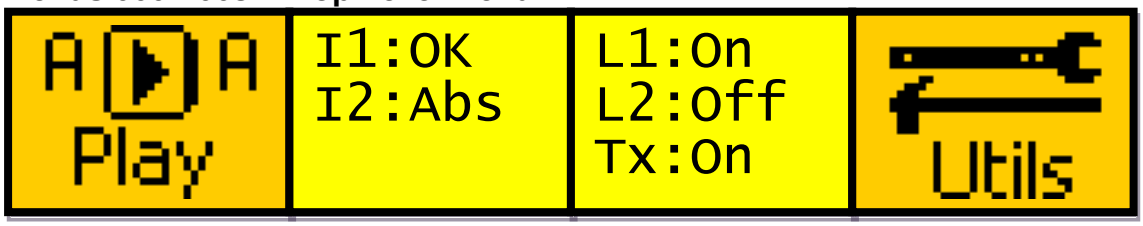
4 The CW-2 Menu Set

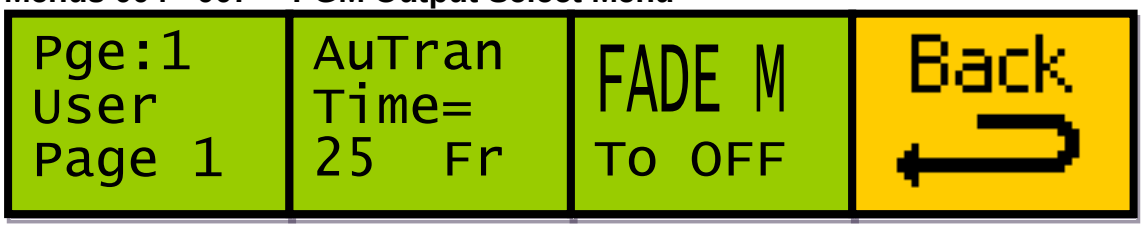
The following set of menus defines the operational controls of the **CW-2**.
Note: Only parameters with **RED** menu numbers are stored in the user memories.

Menus 000 - 003 Top Level Menu



Menu Num.	Heading	Function
0	PGM Output setup	Pressing this will take you to the PGM output sub-menu (Go To **Menus 088 - 091** Output Sub-Menu)
1	PGM output status	This displays information about the state of the **CW-2**. • I1 is the state of the main input • I2 is the state of the key input
2	PGM output status	This displays information about the state of the **CW-2**. • L1 is the state of the logo 1 layer of the program output • L2 is the state of the logo 2 layer of the program output • Tx is the state of the text layer of the program output
3	Utilities	Pressing this will take you to the utilities menu (Go To **Menus 012 - 015** Setup Menu 1/2)

Menus 004 - 007 PGM Output Select Menu



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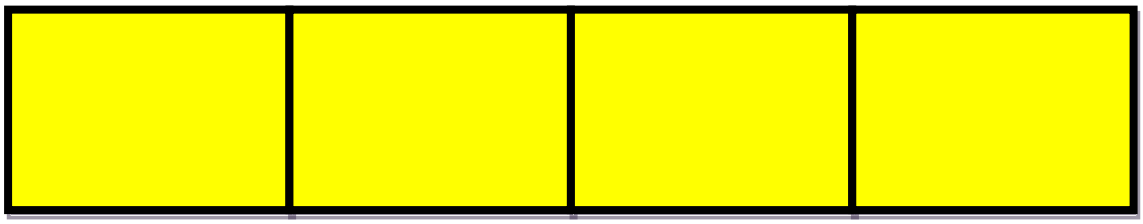
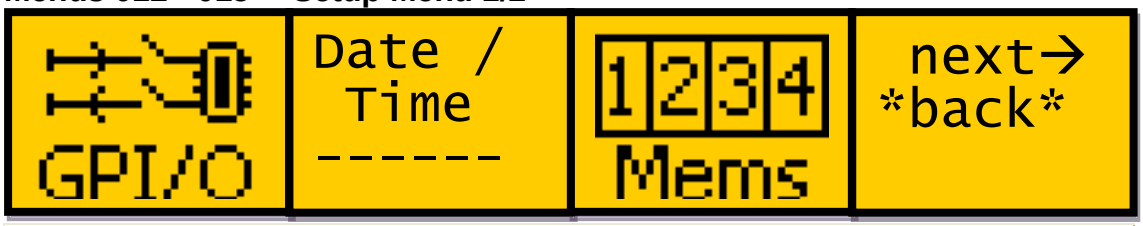
Menu Num.	Heading	Function
4	Page select	This controls the page selected to be displayed on the PGM output.
5	Transition time	This sets the transition time of the page, in frames. This time is also used when fading on and off individual items.
6	Take button	This button will fade the selected page on or off air. If no valid page data in the **CW2**, this will display M----M and will not perform any function.
7	Back	Pressing this will take you back to the front menu level (Go To **Menus 088 - 091** Output Sub-Menu)

Menus 008 - 011 Blank



Menus 012 - 015 Setup Menu 1/2



Menu Num.	Heading	Function
12	GPI/O submenu	Pressing this will take you to the GPI/O setup menu (Go To **Menus 024 - 027** GPI/O Menu)
13	Date/time submenu	Pressing this will take you to the Date/Time setup menu (Go To **Menus 068 - 071** Date/Time Setup)
14	Memories submenu	Pressing this will take you to the Memories menu (Go To **Menus 028 - 031** Memories Menus 1/5)
15	Back	Pressing this button takes you to the

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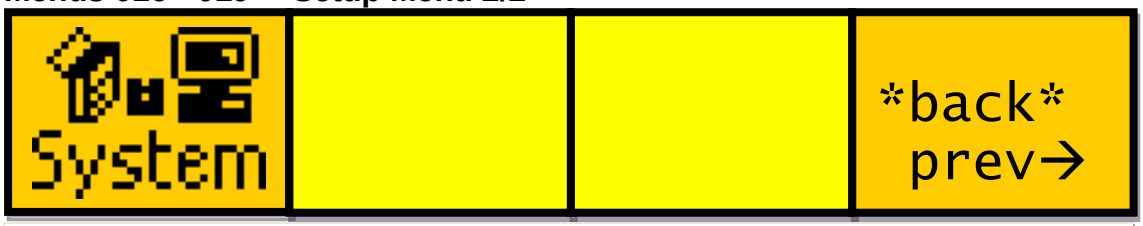
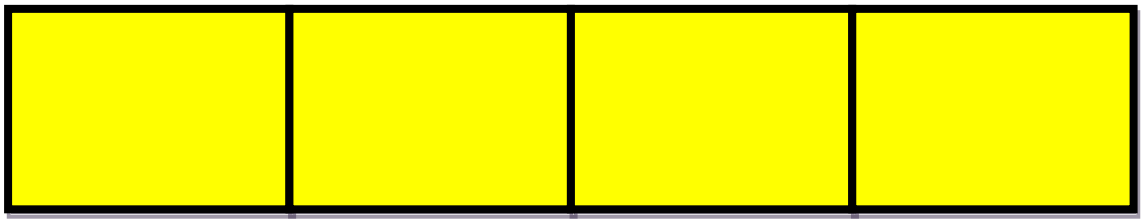
	(next)	previous level of menus (Go To **Menus 000 - 003 Top Level Menu**) Pressing the **next** button on the panel will take you to the next block of four menus.

Menus 016 - 019 Setup Menu 2/2

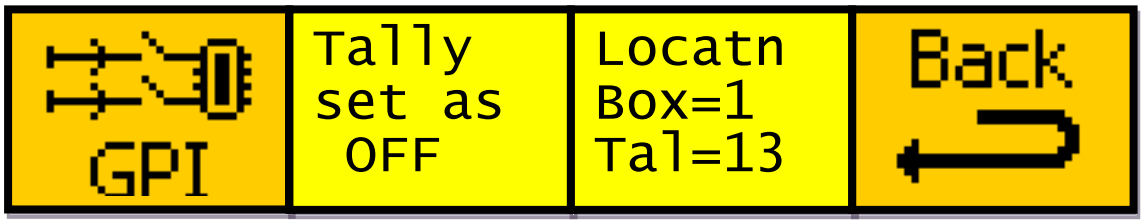


Menu Num.	Heading	Function
16	System submenu	Pressing this will take you to the System menu (Go To **Menus 148 - 151** System Menu)
17	---	---
18	---	---
19	Back (**prev**)	Pressing this button takes you to the previous level of menus (Go To **Menus 012 - 015** Setup Menu 1/2) Pressing the **prev** button on the panel will take you to back to the last menu block of four.

Menus 020 - 023 Blank



Menus 024 - 027 GPI/O Menu



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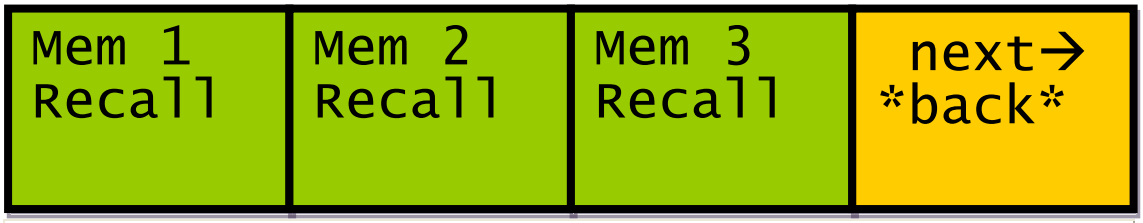
Menu Num.	Heading	Function
24	GPI menu	Pressing this button takes you to the GPI setup menu (Go To **Menus 144 - 147** GPI Details)
25	Tally on/off	Pressing this will set up the tally output between OFF, On-air indication, and No video indication. (See section **3.6.2** for all information on the tally output)
26	Tally location	This sets the location of the tally output.
27	Back	Pressing this button takes you to the previous level of menus (Go To **Menus 012 - 015** **Setup Menu 1/2** **)**

Menus 028 - 031 Memories Menus 1/5



Menu Num.	Heading	Function
28	Memory 1 recall	Pressing this will recall user memory 1
29	Memory 2 recall	Pressing this will recall user memory 2
30	Memory 3 recall	Pressing this will recall user memory 3
31	Back (**next**)	Pressing this button takes you to the previous level of menus (Go To **Menus 012 - 015** **Setup Menu 1/2**) Pressing the **next** button on the panel will take you to the next block of four menus.

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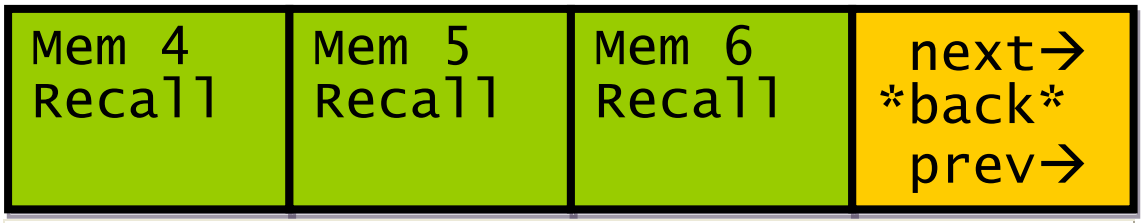
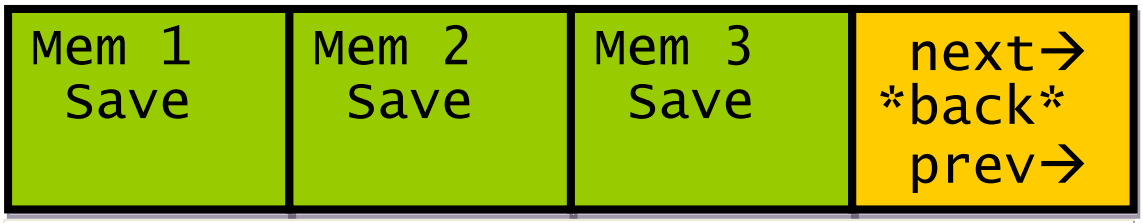
Menus 032 - 035 Memories Menus 2/5



Menu Num.	Heading	Function
32	Memory 4 recall	Pressing this will recall user memory 4
33	Memory 5 recall	Pressing this will recall user memory 5
34	Memory 6 recall	Pressing this will recall user memory 6
35	Back (**next**) (**prev**)	Pressing this button takes you to the previous level of menus (Go To **Menus 012 - 015 Setup Menu 1/2**) Pressing the **next** button on the panel will take you to the next block of four menus. Pressing the **prev** button on the panel will take you to back to the last menu block of four.

Menus 036 - 039 Memories Menus 3/5



Menu Num.	Heading	Function
36	Memory 1 save	Pressing this will save the current unit state to user memory 1
37	Memory 2 save	Pressing this will save the current unit state to user memory 2
38	Memory 3 save	Pressing this will save the current unit state to user memory 3
39	Back (**next**)	Pressing this button takes you to the previous level of menus (Go To **Menus 012 - 015 Setup Menu 1/2**) Pressing the **next** button on the panel

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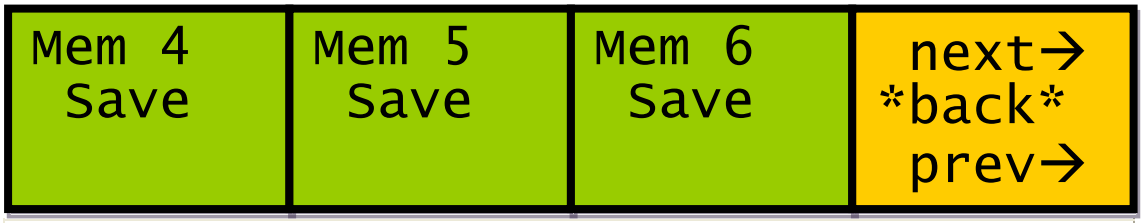
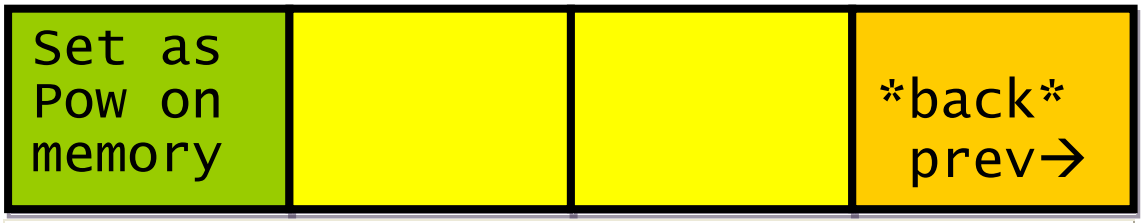
	(**prev**)	will take you to the next block of four menus. Pressing the **prev** button on the panel will take you to back to the last menu block of four.

Menus 040 - 043 Memories Menus 4/5



Menu Num.	Heading	Function
40	Memory 4 save	Pressing this will save the current unit state to user memory 4
41	Memory 5 save	Pressing this will save the current unit state to user memory 5
42	Memory 6 save	Pressing this will save the current unit state to user memory 6
43	Back (**next**) (**prev**)	Pressing this button takes you to the previous level of menus (Go To **Menus 012 - 015 Setup Menu 1/2**) Pressing the **next** button on the panel will take you to the next block of four menus. Pressing the **prev** button on the panel will take you to back to the last menu block of four.

Menus 044 - 047 Memories Menus 5/5



Menu Num.	Heading	Function
44	Power on memory setup	Pressing this will save the current state of the unit as the power-on default state of the **CW-2**.
45	---	---
46	---	---

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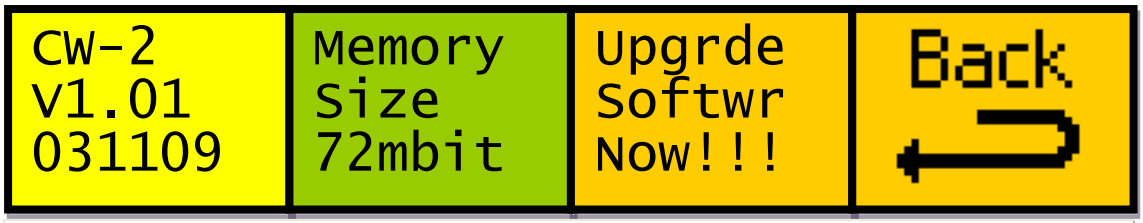
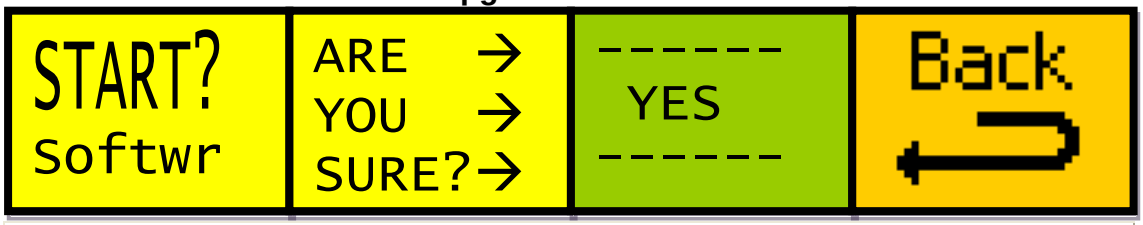
47	Back (prev)	Pressing this button takes you to the previous level of menus (Go To **Menus 012 - 015** **Setup Menu 1/2**) Pressing the **prev** button on the panel will take you to back to the last menu block of four.

Menus 048 - 051 Software Menu



Menu Num.	Heading	Function
48	Software version	This is a display of the software version of the **CW-2**
49	Memory size	This button indicates the memory size of the **CW-2**, currently this is 72Mbit.
50	Software upgrade menu	Pressing this button takes you to the software upgrade menu (Go To **Menus 052 - 055** Software Upgrade Confirmation Menu)
51	Back	Pressing this button takes you to the previous level of menus (Go To **Menus 148 - 151** System Menu)

Menus 052 - 055 Software Upgrade Confirmation Menu



Menu Num.	Heading	Function
52	---	---
53	---	---
54	confirm software upgrade	Pressing this will put the unit into a state where it can be upgraded, see section **3.8** for details of the upgrade

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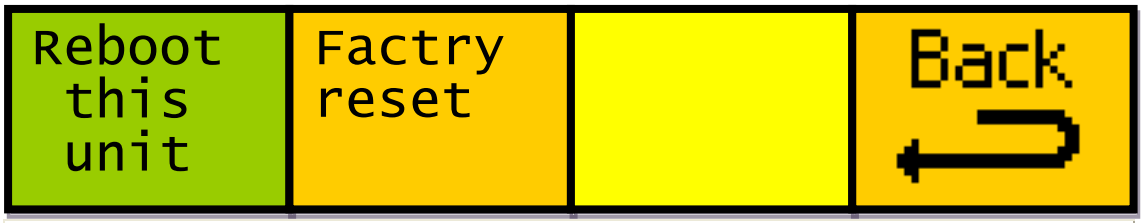
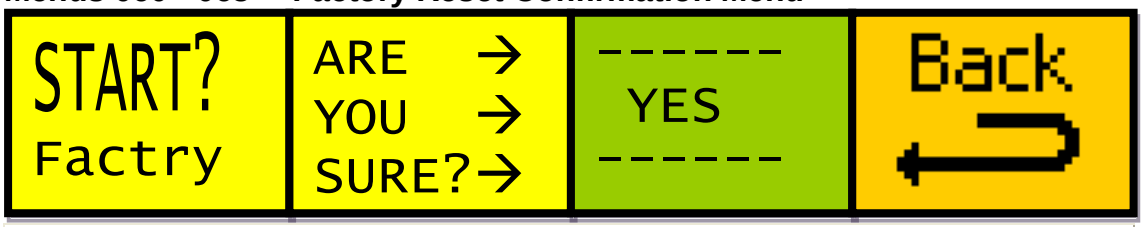
		process.
55	Back	Pressing this button takes you to the previous level of menus (Go To **Menus 048 - 051** Software Menu)

Menus 056 - 059 Resets Menu



Menu Num.	Heading	Function
56	Unit reboot	Pressing this will repower the **CW-2** without the need for removing the card from the chassis.
57	Factory reset menu	Pressing this will take you to the factory reset menu (Go To **Menus 060 - 063** Factory Reset Confirmation Menu)
58	---	---
59	Back	Pressing this button takes you to the previous level of menus (Go To **Menus 148 - 151** System Menu)

Menus 060 - 063 Factory Reset Confirmation Menu



Menu Num.	Heading	Function
60	---	---
61	---	---
62	Confirm factory reset	Pressing this will reset the **CW-2** to the original factory settings; see section **3.7** for more information.
63	Back	Pressing this button takes you to the previous level of menus (Go To **Menus 056 - 059** Resets Menu)

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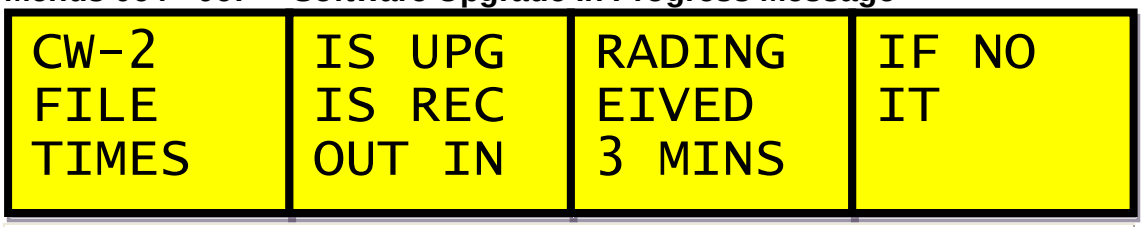
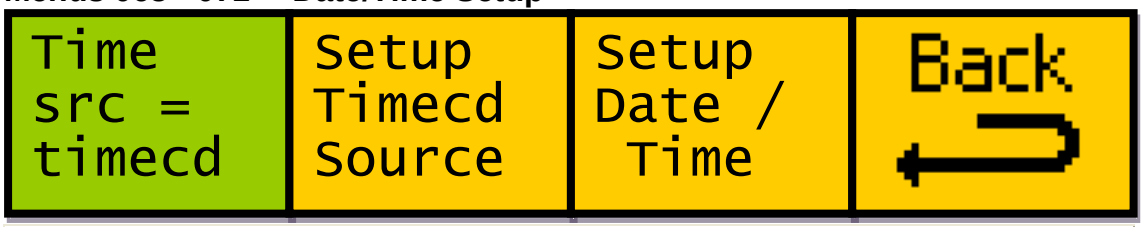
Menus 064 - 067 Software Upgrade In Progress Message



Menu Num.	Heading	Function
64	---	---
65	---	---
66	---	---
67	---	---

Menus 068 - 071 Date/Time Setup



Menu Num.	Heading	Function
68	Timecode Source	Pressing this will toggle the time source between frame locked to the incoming video (FrLock), or from input video embedded timecode (timecd).
69	Timecode Source menu	Pressing this button takes you to the timecode source menu (Go To **Menus 076 - 079** Time Code Menu)
70	Setup date/time menu	Pressing this button takes you to the date/time setup menu (Go To **Menus 072 - 075** Internal Sync Date/Time Setup)
71	Back	Pressing this button takes you to the previous level of menus (Go To **Menus 012 - 015** Setup Menu 1/2)

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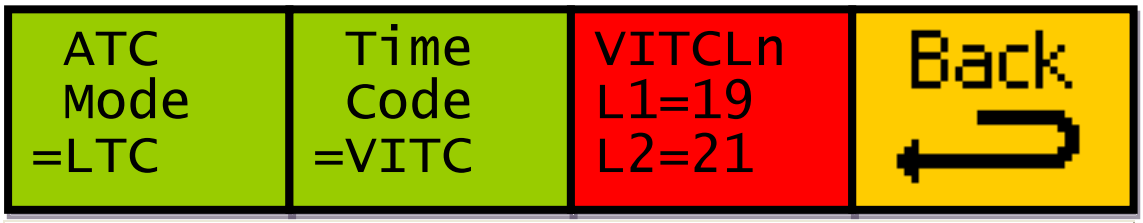
Menus 072 - 075 Internal Sync Date/Time Setup

Menu Num.	Heading	Function
72	Date setup (framelock mode)	This menu sets up the date: • 'dd' sets the day • 'MM' sets the month • 'y' sets the year It will only change if in edit mode (se e below).
73	Time setup (frame lock mode)	This menu sets up the date: • 'HH' sets the hour • 'mm' sets the minute • 'ss' sets the seconds It will only change if in edit mode (se e below).
74	Setup date/time button	This button allows adjustment of the date and time, see section **3.2.4** for details on setting the time when in frame lock time mode.
75	Back	Pressing this button takes you to the previous level of menus (Go To **Menus 068 - 071** Date/Time Setup)

Menus 076 - 079 Time Code Menu



Menu Num.	Heading	Function
76	ATC mode	This menu toggles the ATC mode between LTC, VITC1 and VITC2
77	Timecode type	This menu sets the embedded timecode mode, between VITC, LTC and ATC.
78	VITC locations	This menu sets the line numbers where VITC is present if using VITC timecode.
79	Back	Pressing this button takes you to the

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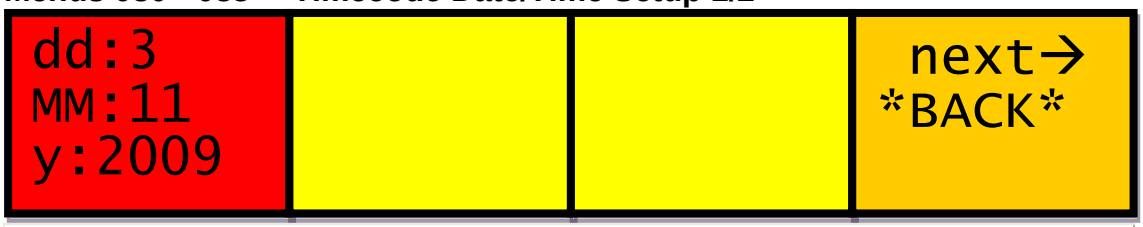
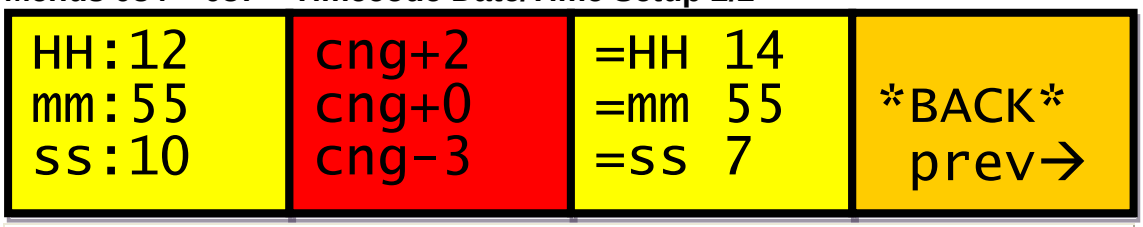
		previous level of menus (Go To **Menus 068 - 071** Date/Time Setup)

Menus 080 - 083 Timecode Date/Time Setup 1/2



Menu Num.	Heading	Function
80	Date setup (timecode mode)	This menu sets up the date: • 'dd' sets the day • 'MM' sets the month • 'y' sets the year The date can be adjusted at any time and is displayed immediately
81	---	---
82	---	---
83	Back (**next**)	Pressing this button takes you to the previous level of menus (Go To **Menus 068 - 071** Date/Time Setup) Pressing the **next** button on the panel will take you to the next block of four menus.

Menus 084 – 087 Timecode Date/Time Setup 2/2



Menu Num.	Heading	Function
84	Timecode time	This menu shows the current time as read in via the timecode: • 'HH' sets the hour • 'mm' sets the minute • 'ss' sets the seconds
85	Timecode time adjustments	This menu is used to adjust the time. The first one adjusts the hour, the second adjusts the minutes and the

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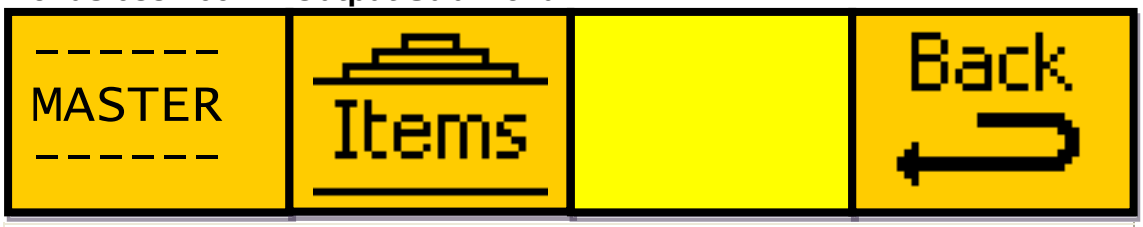
		third adjusts the seconds. The time can be adjusted by + and - 23h 59m 59s. See section **3.2.5** for more information on setting the time using embedded timecode.
86	Displayed time	This menu shows the timecode time, taking into account any change specified in the previous menu.
87	Back (**prev**)	Pressing this button takes you to the previous level of menus (Go To **Menus 068 - 071** Date/Time Setup) Pressing the **prev** button on the panel will take you to back to the last menu block of four.

Menus 088 - 091 Output Sub-Menu



Menu Num.	Heading	Function
88	PGM output menu	Pressing this button will take you to the PGM output menu (Go To **Menus 004 - 007** PGM Output Select Menu)
89	Items output menu	Pressing this button will take you to the individual item control sub-menu (Go To **Menus 096 - 099** Item Select Menu)
90	---	---
91	Back	Pressing this button takes you to the previous level of menus (Go To **Menus 000 - 003** Top Level Menu)

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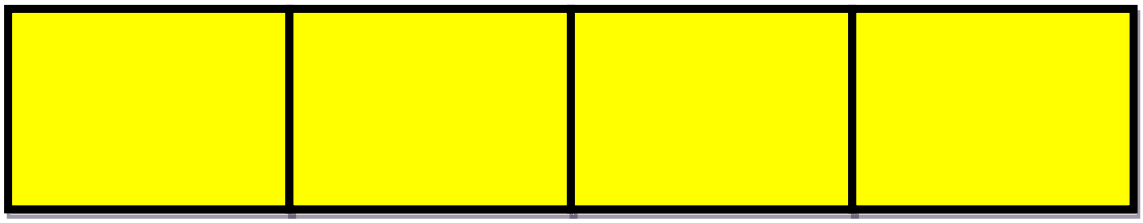
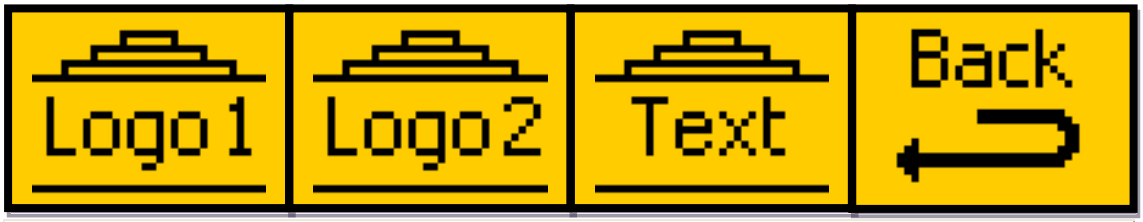
Menus 092 - 095 Blank

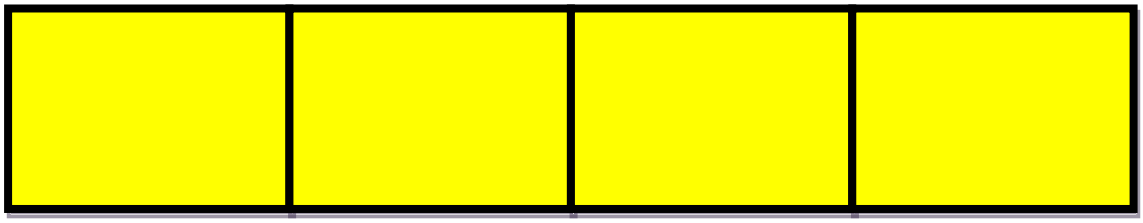


Menus 096 - 099 Item Select Menu



Menu Num.	Heading	Function
96	Logo 1 item menu	Pressing this will take you to the Logo 1 control menu (Go To **Menus 108 - 111** Logo 1 Item Menu 1/2)
97	Logo 2 item menu	Pressing this will take you to the Logo 2 control menu (Go To **Menus 116 - 119** Logo 2 Item Menu 1/2)
98	Text item menu	Pressing this will take you to the Text item control menu (Go To **Menus 124 - 127** Text Item Menu 1/2)
99	Back	Pressing this button takes you to the previous level of menus (Go To **Menus 088 - 091** Output Sub-Menu)

Menus 100 - 103 Blank



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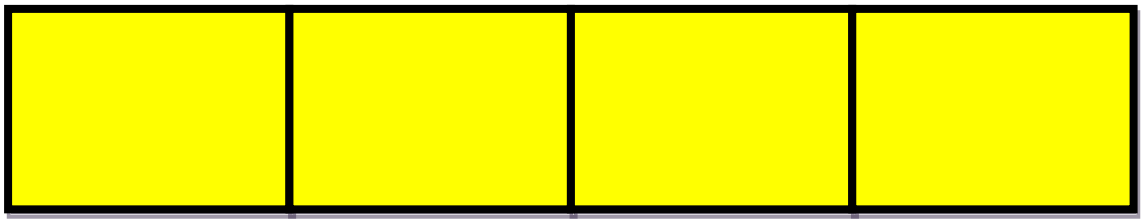
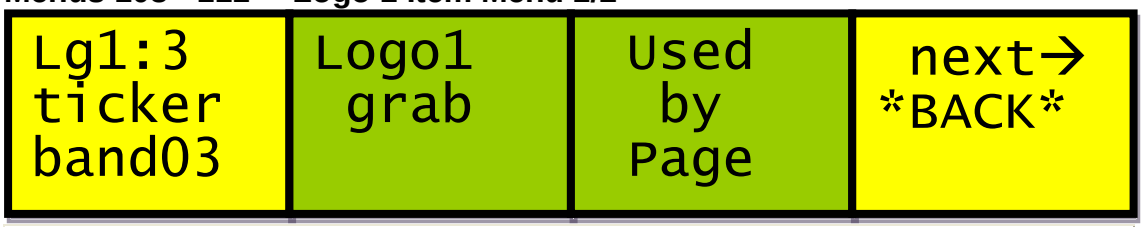
Menus 104 - 107 Blank



Menus 108 - 111 Logo 1 Item Menu 1/2



Menu Num.	Heading	Function
108	Logo 1 select	This menu shows current logo that is selected from the logo list for logo channel 1. If this logo channel has been grabbed and the logo faded down, this menu can be adjusted to select the required logo. See section **3.2.3** for more details on controlling items separately from the page.
109	Logo 1 grab/drop	Adjusting this menu will allow control of the logo 1 channel. • If the menu displays 'Logo 1 grab', pressing it will allow manual adjustment of the logo channel 1 • If the menu displays 'Logo 1 drop', pressing it will remove manual control of the logo channel 1
110	Logo 1 item status	This menu either shows the status of the logo channel 1 (if not grabbed), or is the fade on/fade off control (if grabbed).
111	Back (**next**)	Pressing this button takes you to the previous level of menus (Go To **Menus 096 - 099 Item Select Menu**) Pressing the **next** button on the panel will take you to the next block of four

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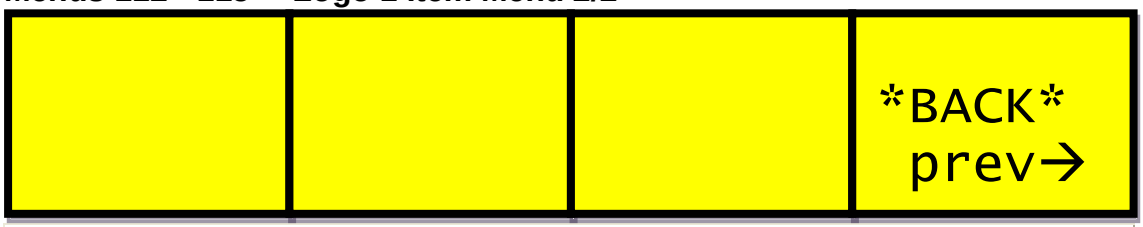
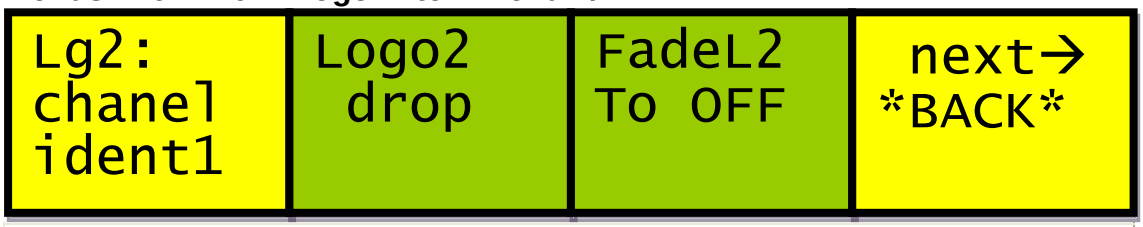
		menus.

Menus 112 - 115 Logo 1 Item Menu 2/2



Menu Num.	Heading	Function
112	---	---
113	---	---
114	---	---
115	Back (**prev**)	Pressing this button takes you to the previous level of menus (Go To **Menus 096 - 099 Item Select Menu**) Pressing the **prev** button on the panel will take you to back to the last menu block of four.

Menus 116 - 119 Logo 2 Item Menu 1/2



Menu Num.	Heading	Function
116	Logo 2 select	This menu shows current logo that is selected from the logo list for logo channel 2. If this logo channel has been grabbed and the logo faded down, this menu can be adjusted to select the required logo. See section **3.2.3** for more details on controlling items separately from the page.
117	Logo 2 grab/drop	Adjusting this menu will allow control of the logo 2 channel. • If the menu displays 'Logo 2 grab', pressing it will allow

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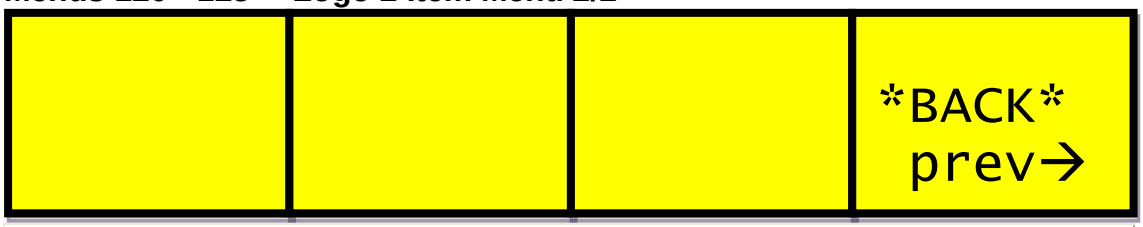
		manual adjustment of the logo channel 2 • If the menu displays 'Logo 2 drop', pressing it will remove manual control of the logo channel 2
118	Logo 2 item status	This menu either shows the status of the logo channel 2 (if not grabbed), or is the fade on/off control (if grabbed).
119	Back (**next**)	Pressing this button takes you to the previous level of menus (Go To **Menus 096 - 099 Item Select Menu**) Pressing the **next** button on the panel will take you to the next block of four menus.

Menus 120 - 123 Logo 2 Item Menu 2/2



Menu Num.	Heading	Function
120	---	---
121	---	---
122	---	---
123	Back (**prev**)	Pressing this button takes you to the previous level of menus (Go To **Menus 096 - 099 Item Select Menu**) Pressing the **prev** button on the panel will take you to back to the last menu block of four.

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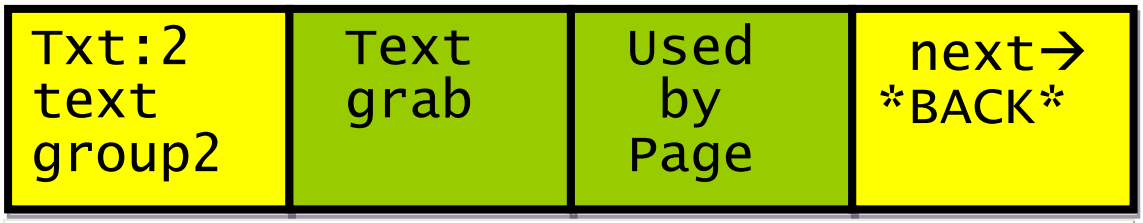
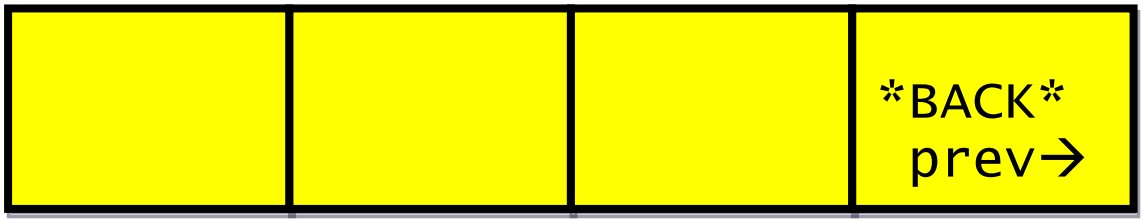
Menus 124 - 127 Text Item Menu 1/2



Menu Num.	Heading	Function
124	Text item select	This menu shows current text group that is selected from the logo list for the text channel. If this channel has been grabbed and the text faded down, this menu can be adjusted to select the required text group. See section **3.2.3** for more details on controlling items separately from the page.
125	Text grab/drop	Adjusting this menu will allow control of the text group. • If the menu displays 'text grab', pressing it will allow manual adjustment of the text group • If the menu displays 'text drop', pressing it will remove manual control of the text group
126	Text item status	This menu either shows the status of the text group (if not grabbed), or is the fade on/off control (if grabbed).
127	Back (**next**)	Pressing this button takes you to the previous level of menus (Go To **Menus 096 - 099 Item Select Menu**) Pressing the **next** button on the panel will take you to the next block of four menus.

Menus 128 - 131 Text Item Menu 2/2



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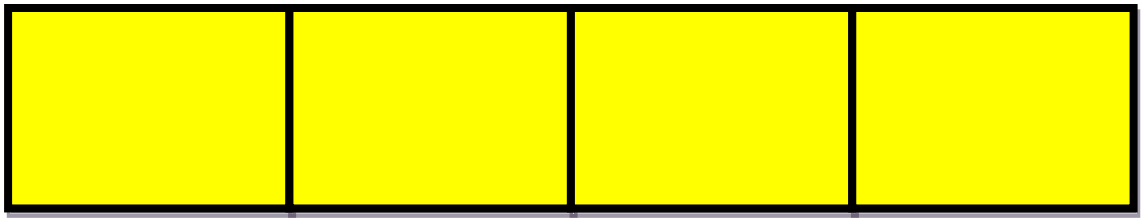
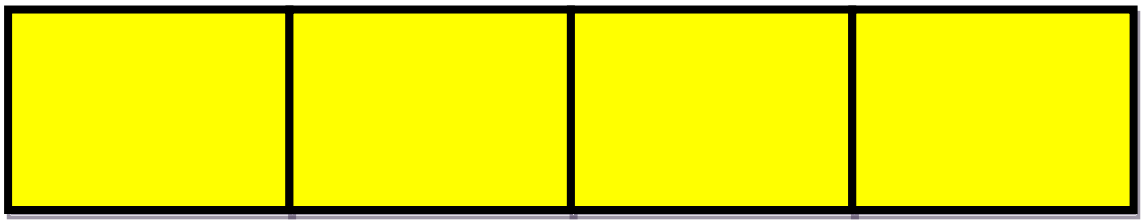
Menu Num.	Heading	Function
128	---	---
129	---	---
130	---	---
131	Back (prev)	Pressing this button takes you to the previous level of menus (Go To **Menus 096 - 099 Item Select Menu**) Pressing the **prev** button on the panel will take you to back to the last menu block of four.

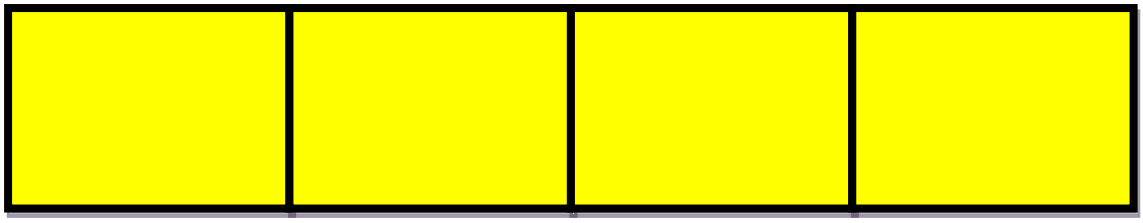
Menus 132 - 135 Blank



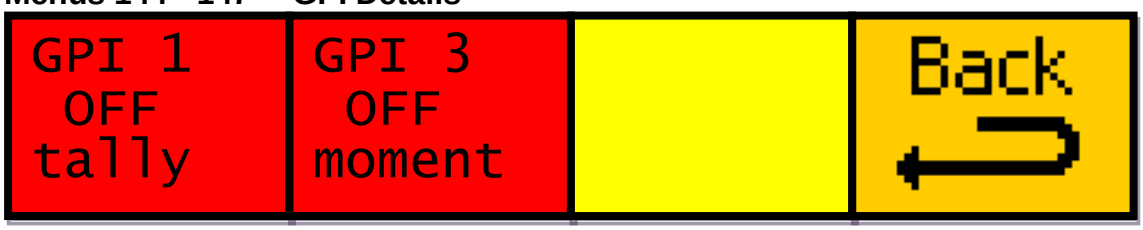
Menus 136 - 139 Blank



Menus 140 - 143 Blank



Menus 144 - 147 GPI Details



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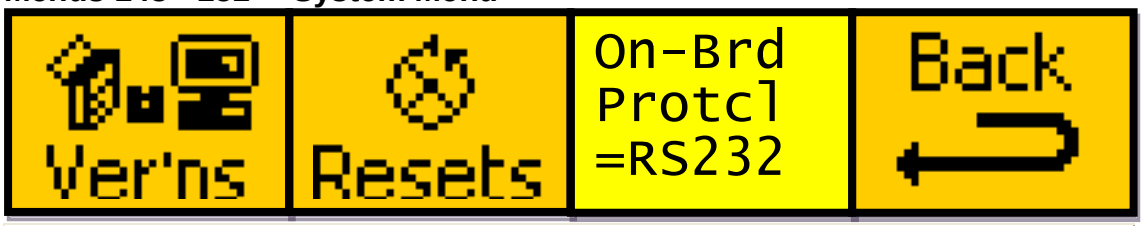
Menu Num.	Heading	Function
144	GPI 1 setup	This menu sets up GPI 1. • The first adjustment sets the GPI on or off • The second adjustment adjusts the format of the input signal between tally (change on both LH and HL) and momentary (change on HL only) See section **3.6.1** for more details on GPI control.
145	GPI 3 setup	This menu sets up GPI 3. • The first adjustment sets the GPI on or off • The second adjustment adjusts the format of the input signal between tally (change on both LH and HL) and momentary (change on HL only)
146	---	---
147	Back	Pressing this button takes you to the previous level of menus (Go To **Menus 024 - 027** GPI/O Menu)

Menus 148 - 151 System Menu



Menu Num.	Heading	Function
148	Versions menu	Pressing this button takes you to the versions menu (Go To **Menus 048 - 051** Software Menu)
149	Resets menu	Pressing this button takes you to the resets menu (Go To **Menus 056 - 059** Resets Menu)
150	Simple protocol setup	This menu adjusts the communication type used for the on-board simple protocol. The options

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		are RS232 (default) and ibus (rarely required).
151	Back	Pressing this button takes you to the previous level of menus (Go To **Menus 016 - 019** Setup Menu 2/2)

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5 Technical Appendix

5.1 GPI/LTC/RS232 technical information.

The Processor card has an RJ-45 connector with GPI, LTC and RS232 connections as shown below:

1	GPI 1	White/Orange
2	Not Used	Orange
3	GPI 3	White/Green
4	GND	Blue
5	RS232 TX	White/Blue
6	RS232 RX	Green
7	LTC-	White/Brown
8	LTC+	Brown

Table 1: GPI/LTC and RS232 pin-out on RJ-45.

5.1.1 RS232 Interface.

This loosely follows the pin convention of EIA-561 which is a standard for RS232 on an RJ45 cable. Only TX, RX and Signal ground (pin 4) are implemented. For the **CW-2** the following RS232 parameters apply:

- 115Kbaud
- 8 Bits, no parity
- 1 Stop bit.

5.1.2 LTC (Linear Time code) Interface.

This unit takes in standard balanced LTC at -10dB to +10dB level. The user can ground the LTC- side for unbalanced use, just using ground and the LTC+. This interface is only designed for LTC at unity play speed and will not track fast shuttling timecode.

5.1.3 GPI Inputs.

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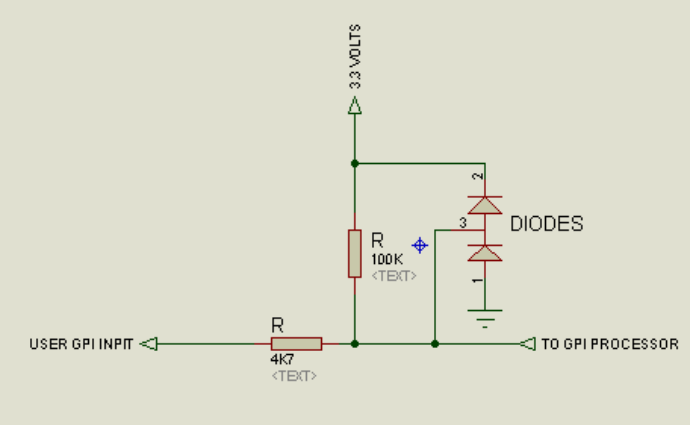

Figure 8 Typical GPI Input

GPI's are normally activated by a short to ground. The GPI has its own internal pull-up resistor. If the user is interfacing with logic then

- Vhigh = +12V>Vin>+3V
- Vlow = +0.3V>Vin>0V

5.1.4 Tally Output.

The **CW-2** does not have an internal tally output, but can use one of the tallies present in the etherbox to indicate different unit states. See the latests **etherbox** manual for the technical specification of the **etherbox** tallies.

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5.2 On-Board automation protocol

5.2.1 Implementation on RS232

A simple text based protocol has been implemented on the RS232 interface.

This on-board protocol is not the same as the **GeNETics** protocol. Refer to the **GeNETics** protocol in section 6 (Product Automation) of the **etherbox** manual. **GeNETics** protocol is used to control a number of processor cards using one connection.

- Baud rate is 115.2k.
- Data is 8 bits, 1 stop bit, no parity.
- Connection is RS232 through the rear port of the HD I/O board.
- The maximum length of the entire message is 512 bytes.

All text strings are shown in inverted commas; do not include them in the actual command sent. Each byte within a text string must be sent within 10mS of each other or the command will time out. Commands must be sent individually, and a reply waited for, before sending out any more commands.

The maximum length of data within a "TT" message is "TT500". No more than 500 chars are allowed for each ticker area.

Please note, the simple protocol is not serviced during a video transition, so commands sent when a transition is in progress will not be processed until the transition is complete.

The command set for the **CW-2** is as follows:

Command	Action	Notes	Sample command
TT,<3 byte ascii length>, <text>, ~~	Writes ticker data into queue	The text gets queued up ready to be displayed, ready for the take-to-air command. The 3 ascii number data length includes the two ~ chars required to signal the end of the message. The length of the message is checked and returns an error if wrong.	"TT022This is ticker text!~~" "TT005Hi!~~"
XT,<1 byte>	Takes queued ticker data to air	If ticker data is queued, it will be displayed once existing ticker data finishes scrolling. If ticker data isnt queued, it will return an error and be ignored. The extra byte specifies the speed that the take command will take effect. There are 2 options: XTI means take text immediately. (capital i, not a one!) XTW means take text when old text has finished.	"XTI" "XTW"
UD,<ddMMyyyy>	Updates date	Day, month and year values are updated. The user must make sure the date is a valid one - it	"UD01012009" sets 1st Jan 2009

		is possible to se the date to Feb 31st, for example. A full message needs to be received or no data is set.	"UD24072009" sets 24th Jul 2009 "UD31022009" sets 31st Feb 2009 (note it relies on the data to be sensible!)
UT,<hhmmss>	Updates time	Hours, minutes and seconds values are updated. Invalid ranges return an error, and a full message needs to be received or no data is set.	"UT170000" sets 17:00.00 in hhmmss "UT000001" sets 00:00.01 in hhmmss "UT120099" returns E5 (out of range)
UO,<hhmmss>	Updates time Offset	The offset added to the embedded time value in hours, minutes and seconds. Invalid ranges return an error, and a full message needs to be received or no data is set.	"UO010203" sets 01:02:03 as offset (note that no negative values can be sent, so can only add time via this protocol)
F1,<2 byte ascii length>, <text>, ~~	Upload static text 1	Writes <text> to the EEPROM where static text area 1 text is stored, max. 64 chars of static text data	"F125Static text area 1 text~~"
F2,<2 byte ascii length>, <text>, ~~	Upload static text 2	Writes <text> to the EEPROM where static text area 2 text is stored, max. 64 chars of static text data	"F125Static text area 2 text~~"
F3,<2 byte ascii length>, <text>, ~~	Upload static text 3	Writes <text> to the EEPROM where static text area 3 text is stored, max. 64 chars of static text data	"F125Static text area 3 text~~"
FUM	Fade up	Fade up master output. Checks current state and will only return 'OK' if the output was faded down before.	"FUM", returns "OK" if ok, or "E1" if not
FDM	Fade down	Fade down master output. Checks current state and will only return 'OK' if the output was faded up before.	"FDM", returns "OK" if ok, or "E1" if not
SP,<2 byte ascii page number>	Set Page number	Page number is 2 bytes, starting from 01 and the max value is checked against the number of pages stored in the card. Main output must be faded down before	"SP01" sets page to 01 "SP10" sets page to 10 "SP99" sets page 99 if there are that many! All assume the output is faded down before you start or an error will be returned
XF	Take static text areas 1, 2 and 3 to the screen	Issues write text command for the 3 static text areas. If no data has been written to the xilinx yet this may display garbage.	"XF"
TM,<1 ascii byte>	Ticker mode	This sets the mode of operation of the ticker. The meaning of the ascii byte is explained in the 'Ticker operation' tab	"TM0" "TM4"
ST	Status request	This will return the status of the ticker, in a format to be decided. The information it will return is: • The status of the ticker (as an ascii	"ST" should reply something like: "00OK" means status = 0, area on-air = 0

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		byte) • The area that is currently on-air. 0 means the first area at B002, and 1 means the second area at B203. • Will then also add "OK"	"20OK" means status = 2, area on-air = 0 "31OK" means status = 3, area on-air = 1
FU,<2 ascii bytes>	Fade up	Will fade up, but only the items asked for. Logo 1 = 1 Logo 2 = 2 Text = 4 Add these to get multiple layers fading up or down at once.	"FU06" fades up Logo2 and text items. "FU7" fades up all items.
FD,<2 ascii bytes>	Fade down	Will fade up, but only the items asked for. Logo 1 = 1 Logo 2 = 2 Text = 4 Add these to get multiple layers fading up or down at once.	"FD04" fades down text items. "FD7" fades down all items.
L1,<2 ascii bytes>	Select logo 1	If the logo number is valid, it will set logo 1 to the received logo number.	"L104" sets logo 1 to number 4 "L100" is valid and will select no logo
L2,<2 ascii bytes>	Select logo 2	If the logo number is valid, it will set logo 2 to the received logo number.	"L203" sets logo 2 to number 3 "L200" is valid and will select no logo
IL,<2 ascii byte>	Item grab	Grabs the specified items: 1 = logo 1 2 = logo 2 4 = text	"IL03" grabs logo 1 and logo 2 "IL01" grabs logo 1 "IL7" grabs all items
IU,<2 ascii byte>	Item drop	Drop the specified items: 1 = logo1 2 = logo2 4 = text	"IU3" drops logo 1 and logo 2

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5.3 geNETics Automation Protocol

geNETics Automation Protocol Parameter table
This is the list of automatically extracted parameters for the **CW-2**. This is used for the generic **geNETics** automation protocol. See the **etherbox** manual for a full description of its usage.

Menu	Access	Text	Low	Up	Lev	Txt1	Txt2	Txt3	Txt4
0	N/A	[Gr]	N/A	N/A	A				
1	RD	{# }	0	2	A	I1:OK	I1:Abs	I1:Abs	
1	RD	{# }	0	2	B	I2:OK	I2:Abs	L2:Abs	
1	RD	{# }	0	2	C				
2	RD	{# }	0	2	A	L1:On	L1:Off	L1:Err	
2	RD	{# }	0	2	B	L2:On	L2:Off	L2:Err	
2	RD	{# }	0	2	C	Tx:On	Tx:Off	Tx:Err	
3	N/A	[Gr]	N/A	N/A	A				
4	R/W	{Pge:# }	0	Variable	A				
5	R/W	{AuTran}{Time= }{# Fr}	1	120	A				
6	R/W	{# }	0	2	A	FADE M	FADE M	M----M	
6	RD	{# }	0	2	B	To ON	To OFF		
7	N/A	[Gr]	N/A	N/A	A				
8	N/A	{ }{ }{ }	N/A	N/A	A				
9	N/A	{ }{ }{ }	N/A	N/A	A				
10	N/A	{ }{ }{ }	N/A	N/A	A				
11	N/A	{ }{ }{ }	N/A	N/A	A				
12	N/A	[Gr]	N/A	N/A	A				
13	N/A	{Date /}{ Time }{------}	N/A	N/A	A				
14	N/A	[Gr]	N/A	N/A	A				
15	N/A	{ next]}{*BACK*}{ }	N/A	N/A	A				
16	N/A	[Gr]	N/A	N/A	A				
17	N/A	{ }{ }{ }	N/A	N/A	A				
18	N/A	{ }{ }{ }	N/A	N/A	A				
19	N/A	{ }{*BACK*}{ prev]}	N/A	N/A	A				
20	N/A	{ }{ }{ }	N/A	N/A	A				
21	N/A	{ }{ }{ }	N/A	N/A	A				
22	N/A	{ }{ }{ }	N/A	N/A	A				
23	N/A	{ }{ }{ }	N/A	N/A	A				
24	N/A	{ }{ GPIs }{------}	N/A	N/A	A				
25	R/W	{Tally }{set as}{# }	0	2	A	OFF	On-air	No vid	
26	R/W	{Locatn}{Box=# }	0	16	A				
26	R/W	{Tal=# }	0	99	B				
27	N/A	[Gr]	N/A	N/A	A				
28	R/W	{% > }{Mem 1 }{# }	0	1	A	Recall	DONE		
29	R/W	{% > }{Mem 2 }{# }	0	1	A	Recall	DONE		
30	R/W	{% > }{Mem 3 }{# }	0	1	A	Recall	DONE		
31	N/A	{ next]}{*BACK*}{ }	N/A	N/A	A				
32	R/W	{% > }{Mem 4 }{# }	0	1	A	Recall	DONE		
33	R/W	{% > }{Mem 5 }{# }	0	1	A	Recall	DONE		
34	R/W	{% > }{Mem 6 }{# }	0	1	A	Recall	DONE		

35	N/A	{ next]}{*BACK*}{ prev]}	N/A	N/A	A				
36	R/W	{% > }{Mem 1 }{# }	0	1	A	Save	DONE		
37	R/W	{% > }{Mem 2 }{# }	0	1	A	Save	DONE		
38	R/W	{% > }{Mem 3 }{# }	0	1	A	Save	DONE		
39	N/A	{ next]}{*BACK*}{ prev]}	N/A	N/A	A				
40	R/W	{% > }{Mem 4 }{# }	0	1	A	Save	DONE		
41	R/W	{% > }{Mem 5 }{# }	0	1	A	Save	DONE		
42	R/W	{% > }{Mem 6 }{# }	0	1	A	Save	DONE		
43	N/A	{ next]}{*BACK*}{ prev]}	N/A	N/A	A				
44	R/W	{# }	0	1	A	Set As	!WAIT!		
45	N/A	{ }{ }{ }	N/A	N/A	A				
46	N/A	{ }{ }{ }	N/A	N/A	A				
47	N/A	{ }{*BACK*}{ prev]}	N/A	N/A	A				
48	N/A	{! }{ }{ }	N/A	N/A	A				
49	R/W	{Memory}{Size }{# }	0	1	A	18mbit	72mbit		
50	N/A	{Upgrde}{Softwr}{Now!!!}	N/A	N/A	A				
51	N/A	[Gr]	N/A	N/A	A				
52	N/A	{START?}{Softwr}{ }	N/A	N/A	A				
53	N/A	{ ARE]}{ YOU]}{SURE?]}	N/A	N/A	A				
54	R/W	{------}{# }	0	1	A	YES			
55	N/A	[Gr]	N/A	N/A	A				
56	R/W	{# }	0	1	A	Reboot	Please		
56	RD	{# }	0	1	B	this	wait		
56	RD	{# }	0	1	C	unit	.....		
57	N/A	{Factry}{reset }{ }	N/A	N/A	A				
58	N/A	{ }{ }{ }	N/A	N/A	A				
59	N/A	[Gr]	N/A	N/A	A				
60	N/A	{START?}{Factry}{ }	N/A	N/A	A				
61	N/A	{ ARE]}{ YOU]}{SURE?]}	N/A	N/A	A				
62	R/W	{# }	0	1	A	------	Please		
62	RD	{# }	0	1	B	YES	.Wait.		
62	RD	{# }	0	1	C	------	.....		
63	N/A	[Gr]	N/A	N/A	A				
64	N/A	{CW-2 }{FILE }{TIMES }	N/A	N/A	A				
65	N/A	{IS UPG}{IS REC}{OUT IN}	N/A	N/A	A				
66	N/A	{RADING}{IEVED }{3 MINS}	N/A	N/A	A				
67	N/A	{IF NO }{IT }{ }	N/A	N/A	A				
68	R/W	{Time }{src = }{# }	0	1	A	panel	timecd		
69	N/A	{Setup }{timecd}{source}	N/A	N/A	A				
70	N/A	{Setup }{Date /}{ Time }	N/A	N/A	A				
71	N/A	[Gr]	N/A	N/A	A				
72	R/W	{dd: # }	1	Variable	A				
72	R/W	{MM: # }	1	12	B				
72	R/W	{y:# }	0	16383	C				
73	R/W	{HH: # }	0	23	A				
73	R/W	{mm: # }	0	59	B				
73	R/W	{ss: # }	0	59	C				
74	R/W	{# }	0	2	A	Edit	Save	data	
74	RD	{# }	0	2	B	date /	edited	saved!	
74	RD	{# }	0	2	C	time	data	******	

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75	N/A	[Gr]	N/A	N/A	A				
76	R/W	{ ATC }{ Mode }{# }	0	2	A	=LTC	=VITC1	=VITC2	
77	R/W	{ Time }{ Code }{# }	0	2	A	=ATC	=LTC	=VITC	
78	R/W	{VITCLn}{L1=# }	1	312	A				
78	R/W	{L2=# }	1	312	B				
79	N/A	[Gr]	N/A	N/A	A				
80	R/W	{dd: # }	1	Variable	A				
80	R/W	{MM: # }	1	12	B				
80	R/W	{y:# }	0	16383	C				
81	N/A	{ }{ }{ }	N/A	N/A	A				
82	N/A	{ }{ }{ }	N/A	N/A	A				
83	N/A	{ next]}{*BACK*}{ }	N/A	N/A	A				
84	RD	{HH: # }	0	23	A				
84	RD	{mm: # }	0	59	B				
84	RD	{ss: # }	0	59	C				
85	R/W	{cng# }	65513	23	A				
85	R/W	{cng# }	65477	59	B				
85	R/W	{cng# }	65477	59	C				
86	RD	{=HH # }	0	23	A				
86	RD	{=mm # }	0	59	B				
86	RD	{=ss # }	0	59	C				
87	N/A	{ }{*BACK*}{ prev]}	N/A	N/A	A				
88	N/A	{------}{MASTER}{------}	N/A	N/A	A				
89	N/A	[Gr]	N/A	N/A	A				
90	N/A	{ }{ }{ }	N/A	N/A	A				
91	N/A	[Gr]	N/A	N/A	A				
92	N/A	{ }{ }{ }	N/A	N/A	A				
93	N/A	{ }{ }{ }	N/A	N/A	A				
94	N/A	{ }{ }{ }	N/A	N/A	A				
95	N/A	{ }{ }{ }	N/A	N/A	A				
96	N/A	[Gr]	N/A	N/A	A				
97	N/A	[Gr]	N/A	N/A	A				
98	N/A	[Gr]	N/A	N/A	A				
99	N/A	[Gr]	N/A	N/A	A				
100	N/A	{ }{ }{ }	N/A	N/A	A				
101	N/A	{ }{ }{ }	N/A	N/A	A				
102	N/A	{ }{ }{ }	N/A	N/A	A				
103	N/A	{ }{ }{ }	N/A	N/A	A				
104	N/A	{ }{ }{ }	N/A	N/A	A				
105	N/A	{ }{ }{ }	N/A	N/A	A				
106	N/A	{ }{ }{ }	N/A	N/A	A				
107	N/A	{ }{ }{ }	N/A	N/A	A				
108	R/W	{Lg1:# }	0	Variable	A				
109	R/W	{Logo1 }{# }	0	3	A	grab	drop	unchan	
109	RD	{# }	0	3	B			geable	
110	R/W	{# }	0	3	A	FadeL1	FadeL1	item	used
110	RD	{# }	0	3	B	To ON	To OFF	free	by
110	RD	{# }	0	3	C				page
111	N/A	{ next]}{*BACK*}{ }	N/A	N/A	A				

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112	N/A	{ }{ }{ }	N/A	N/A	A				
113	N/A	{ }{ }{ }	N/A	N/A	A				
114	N/A	{ }{ }{ }	N/A	N/A	A				
115	N/A	{ }{*BACK*}{ prev]}	N/A	N/A	A				
116	RD	{Lg2:# }	0	Variable	A				
117	R/W	{Logo2 }{# }	0	3	A	grab	drop	unchan	
117	RD	{# }	0	3	B			geable	
118	R/W	{# }	0	3	A	FadeL2	FadeL2	item	used
118	RD	{# }	0	3	B	To ON	To OFF	free	by
118	RD	{# }	0	3	C				page
119	N/A	{ next]}{*BACK*}{ }	N/A	N/A	A				
120	N/A	{ }{ }{ }	N/A	N/A	A				
121	N/A	{ }{ }{ }	N/A	N/A	A				
122	N/A	{ }{ }{ }	N/A	N/A	A				
123	N/A	{ }{*BACK*}{ prev]}	N/A	N/A	A				
124	RD	{Txt:# }	0	Variable	A				
125	R/W	{Text }{# }	0	3	A	grab	drop	unchan	
125	RD	{# }	0	3	B			geable	
126	R/W	{# }	0	3	A	FadeTx	FadeTx	item	used
126	RD	{# }	0	3	B	To ON	To OFF	free	by
126	RD	{# }	0	3	C				page
127	N/A	{ next]}{*BACK*}{ }	N/A	N/A	A				
128	N/A	{ }{ }{ }	N/A	N/A	A				
129	N/A	{ }{ }{ }	N/A	N/A	A				
130	N/A	{ }{ }{ }	N/A	N/A	A				
131	N/A	{ }{*BACK*}{ prev]}	N/A	N/A	A				
132	N/A	{ }{ }{ }	N/A	N/A	A				
133	N/A	{ }{ }{ }	N/A	N/A	A				
134	N/A	{ }{ }{ }	N/A	N/A	A				
135	N/A	{ }{ }{ }	N/A	N/A	A				
136	N/A	{ }{ }{ }	N/A	N/A	A				
137	N/A	{ }{ }{ }	N/A	N/A	A				
138	N/A	{ }{ }{ }	N/A	N/A	A				
139	N/A	{ }{ }{ }	N/A	N/A	A				
140	N/A	{ }{ }{ }	N/A	N/A	A				
141	N/A	{ }{ }{ }	N/A	N/A	A				
142	N/A	{ }{ }{ }	N/A	N/A	A				
143	N/A	{ }{ }{ }	N/A	N/A	A				
144	R/W	{GPI 1 }{# }	0	1	A	OFF	ON		
144	R/W	{# }	0	1	B	tally	moment		
145	R/W	{GPI 3 }{# }	0	1	A	OFF	ON		
145	R/W	{# }	0	1	B	tally	moment		
146	N/A	{ }{ }{ }	N/A	N/A	A				
147	N/A	[Gr]	N/A	N/A	A				
148	N/A	[Gr]	N/A	N/A	A				
149	N/A	[Gr]	N/A	N/A	A				
150	R/W	{On-Brd}{Protcl}{# }	0	2	A	=OFF	=RS232	=I-BUS	
151	N/A	[Gr]	N/A	N/A	A				

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